Austrobaileya 4(4): 695–696 (1997)

Book Review

M.I.H.Brooker and D.A.Kleinig (1994). ***Field Guide to Eucalypts: Volume 3, Northern Australia.*** Pp. 383. Inkata Press, Sydney. Price. c. $145. ISBN 0 909605 67 X.

The correct identification of eucalypts in northern Australia has been wrought with difficulties in recent years. A considerable number of new eucalypt taxa have been named since the 'Flora of Australia' account (Chippendale 1988) and while many of the new names apply to well circumscribed and recognisable taxa, some are dubious to say the least. To the non-eucalypt specialist the situation with identifications had become almost unmanageable with an unknown number of unnamed taxa and no clear definitions of existing entities.

Hence the arrival of the long-awaited third volume of the Brooker and Kleinig fieldguide trilogy on eucalypts could be greeted with considerable anticipation. The third and final volume in the set deals with 'Northern Australia' which is all of Queensland (some slight overlap with Vol. 1), the Northern Territory, and Western Australia south to latitude 26°. Ideally this volume should have the following attributes to enable the user to achieve their identification and information objectives.

(1) enable identification of material (fertile) of known origin

(2) indicate relationships amongst the taxa

(3) indicate patterns of variation within and between taxa

(4) illustrate the taxa

(5) provide essential synonymy and misapplications of names

(6) provide information on distribution

(7) provide information on habitat preferences

The first part of the book (pp. 1-20) deals with a short introduction to eucalypt history, morphology, hybrids and variation. The various sections on morphology are well illustrated with both colour photographs and line drawings. The novice should gain a good working knowledge of what a eucalypt can possibly look like from these sections.

The second part of the book (pp. 21–45) provides keys to the taxa covered in the book. The authors have sensibly split these into nine regional groupings (a point that should be noted by publishers of major floras). These keys are relatively unambiguous and the five for Queensland work most of the time if used in conjunction with the digests and illustrations later in the book. Some groups of taxa, e.g. stringybarks in the *Eucalyptus youmanii* Blakely & McKie, *E. caliginosa* Blakely & McKie and *E. williamsianus* L.A.S.Johnson & K.D.Hill complex and most of the red bloodwoods, are difficult to key (even if out in the field with complete material). The treatment of the red bloodwoods appears incomplete, as many of the new taxa recently recognised by Hill & Johnson (1995) are not included. In some other groups that have been recently revised (e.g. yellow bloodwoods and some ironbark groups) there are few or no problems in key use.

The third and major part of the book (pp. 47–370) comprises digests and plates of species. In this part the individual taxa are arranged within the Pryor and Johnson classification and closely related taxa tend to be located sequentially. For each taxon the following are provided – botanical name and author, common name(s) (where known), a description, distribution (written and map), some limited information on synonymy and past misapplications, and between three and six colour photographs that illustrate habit, leaf venation, bark, buds, flowers, fruit.

The descriptions are variable in their content and length. Some taxa are compared to closely related taxa (e.g. *E. williamsiana* to *E. youmanii*), whereas it may have been better to have had a full description as well. Mostly they are easy to follow, particularly if the user is thoroughly familiar with the earlier section on eucalypt morphology. The written distribution information and maps appear current and are relatively detailed, although other workers in eucalypt systematics would strongly disagree with this (Hill & Johnson 1995: 495-499).

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The information on synonymy is a little scant. Given all of the name changes and misapplications of recent times a little more detail would have been helpful. Some recently named taxa (e.g. *E. subtilior* L.Johnson & K.D.Hill) are placed in synonymy of others, but without any explanation whatsoever. Other 'well known' taxa such as *E. drepanophylla* F.Muell. ex Benth. are subsumed, but there is no explanation for this. In some cases an explanation may be complicated, but this could be achieved in an appendix similar to that for the new taxa named in the volume. Some essential synonymy is omitted, e.g. *E. codonocarpa* Blakely & McKie has been widely known as *E. approximans* subsp. *codonocarpa* (Blakely & McKie) L.A.S.Johnson & Blaxell (Henderson 1994), yet nowhere in this book (either in the index or in the account of *E. codonocarpa*) can mention of *E. approximans* be found. Some names don't make it at all, notably *E. kabiana* L.A.S.Johnson & K.D.Hill, although the taxon is recognised and included as *Eucalyptus* sp. *TT.* Author citation is woefully non-standard, e.g. 'Carr & Carr' instead of 'D.J.Carr & S.G.M.Carr', and 'L.Johnson & K.Hill' instead of 'L.A.S.Johnson & K.D.Hill'.

The photographs are generally excellent but it would have been useful to have more of seedling foliage. There is no information on localities (or vouchers!) for the various photos. Hence it is not determinable whether all of the photos relate to material from a single locality or whether they comprise an amalgam of collections. Some photographs show extremes of variations (e.g. the buds of *E. rhodops* D.J.Carr & S.G.M.Carr are more commonly conical rather than beaked). The various unnamed taxa would be better indicated using a locality and voucher (cf. Henderson 1994) thus enabling the user to corroborate their specimens with those of established identity.

No information in the species digests is provided on variation within species, hybridisation with other species or habitat preferences. Despite the relatively narrow circumscription of many eucalypt taxa there is still considerable morphological variation in some species. Conversely some species (e.g. *E. crebra* F.Muell.) comprise complexes (but how many users would know this?) and the material illustrated shows a minor component of the known variation. A cursory examination of the eucalypt literature indicates that there are hybrids, introgression and clines common within the group. An indication of the taxa in which this occurs would be helpful and in this respect the book conveys the incorrect impression that the taxa covered are all clear-cut and unambiguous. Any field botanist will soon tell you that this is far from the actual situation. Strangely enough there is no information on habitat preferences, and only a limited amount of data can be gleaned from the single habitat photograph for each species. Many eucalypts may be closely allopatric but separated by particular ecological preferences such as moisture and substrate. It would be useful to have some general information on this.

In summation this book delivers well on attributes 1, 2, 4 and 6, but fails on attributes 3, 5 and 7. Despite these failings the book is most useful, well presented, easy to read and is visually attractive. The great number of colour photographs make it value for money, although its size limits use to other than laboratory or vehicle based exercises.

It is recommended and essential to anyone that needs to identify eucalypts in northern Australia. A revised edition that incorporates all of the subsequent changes and corrections will be even more so.

References

Chippendale, G.M. (1988). *Flora of Australia* Vol. 19. (Exec. Ed. A.S.George.) Canberra: Australian Government Publishing Service.

Henderson, R.J.F. (ed.) (1994). *Queensland Vascular Plants: Names and Distribution.* Brisbane: Queensland Department of Environment & Heritage.

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